

Plumage coloration unveils bird's latitudinal shift in response to global climate change

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Climate change is the most recent driving forces to affect ecological communities. Various climatically caused effects, including geographic range shift, have been documented in a wide range of taxonomic groups, including birds. However, previous studies did not contrive to tease the mechanisms out how the observed shifts are attributed to ecological, morphological, life history and color related traits. To unveil the mechanisms, we examined the roles of these traits on birds shift using published and primary data on their responses to climate change. We found that conspicuousness, plumage color type, dominant conspicuous color, and geographical zone are the best predictors of bird shifts. Conspicuous birds showed a significant shift towards north than inconspicuous ones. Compared to birds with melanin-based plumage colors, birds with carotene-based and structural plumage colors are more likely to shift north. Tropical birds were less likely to shift north and south either. Although this is the first large scale attempt, comprehensive analyses incorporating data from all continents may reveal a clear pattern of birds shift in response to global climate change.

Biography

Nega Tassie has completed his M.Sc in marine biodiversity and conservation at the University of Ghent in 2010 and currently he is a Ph.D. student at the National University of Singapore. His area of research is on climate and habitat change impact modeling on biodiversity. He has published few papers in reputed journals and he has prepared a manuscript for submission to Science.

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